CLAIMS

What is claimed is:

1. A system for signal processing, comprising:

a compensation system configured to provide a digitally compensated representation of a first amplified analog signal indicative of a first parameter based on a digital representation of the first amplified analog signal and a digital representation of a second signal indicative of a second parameter, the digitally compensated representation of the first amplified analog signal being determined by applying a pre-stored compensation factor to an offset adjustment calculation for the second parameter to provide a compensated offset adjustment, the compensated offset adjustment being combined with an adjusted gain to provide offset and gain correction for weighting the first parameter to provide the digitally compensated representation of the first parameter.

2. The system of claim 1, the adjusted gain being determined by applying a pre-stored gain factor to the second parameter.

3. The system of claim 1, the first parameter is weight and the second parameter is temperature.

4. The system of claim 1, further comprising a scaling component that scales the digital representation of the first amplified analog signal to a first scale and scales the digital representation of the second signal to a second scale, the compensation system converting at least one of the digital representation of the first amplified analog signal and the digital representation of the second signal to a scale that is compatible with the first and second scales.

5. The system of claim 4, the compensation system converting the offset and gain correction to an output scale that is different from the first and second scales.

6. The system of claim 1, the compensation system comprising a digital signal processor (DSP).

7. The system of claim 6, pre-stored compensation factor and the pre-stored gain factor data are stored in a memory associated with the DSP.

8. The system of 1, further comprising an analog amplifier that provides the first amplified signal.

9. The system of claim 8, further comprising a digital-to-analog converter (DAC) for converting a coarse correction signal corresponding to an analog coarse offset and gain correction signal that is provided to the amplifier for implementing coarse offset and gain correction based on the second parameter.

10. The system of claim 9, the compensation system further comprising a programmable component for setting a coarse offset, the compensation system providing the coarse correction signal to the amplifier for implementing the coarse offset and gain correction.

11. The system of claim 10, the compensation system further comprising an algorithm for implementing a digital fine offset and gain correction compensation on the first amplified analog signal to provide the digitally compensated representative of the first parameter.

12. A compensation system that implements offset and gain correction for an analog circuit, comprising:

a first register that stores a temperature compensation factor based on a digital representation of a temperature and a temperature compensation coefficient;

a second register that stores an offset adjustment calculation from a digital representation of an amplified signal and a fine offset coefficient; and

a processor that produces a temperature compensated offset adjustment based on the temperature compensation factor and the offset adjustment, the processor storing the temperature compensated offset adjustment in one of the first and second registers, the other of the first and second registers storing a calculated temperature adjusted gain based on the digital representation of the temperature, and a gain coefficient, the processor employing the temperature adjusted gain and the temperature compensated offset adjustment to provide an offset and gain correction.

13. The compensation system of claim 12, further comprising memory that contains at least some of the temperature compensation coefficients, the fine offset coefficient, and the gain coefficient.

14. The compensation system of claim 12, the digital representation of the amplified signal is scaled to a first scale and the digital representation of a temperature is scaled to a second scale, the processor converting at least one of the digital representation of the first amplified analog signal and the digital representation of the temperature to a compatible scale.

15. The compensation system of claim 12, further comprising:

an analog amplifier that provides the amplified signal; and

an analog-to-digital converter that converts the amplified signal to the digital representation of the amplified signal, the processor employing the offset and gain correction to provide a digitally compensated representation of the amplified signal.

16. The compensation system of claim 15, the analog amplifier having a gain greater than about one hundred.

17. The compensation system of claim 15, further comprising a coarse offset module that provides a coarse offset adjustment signal to the analog amplifier for implementing a coarse error correction associated with the analog amplifier, the offset and gain correction provided by the compensation system corresponding to a fine error correction associated with the analog amplifier.

18. A system for signal processing, comprising:

means for providing a digital representation of a first amplified analog signal indicative of a first parameter;

means for providing a digital representation of a second analog signal indicative of a second parameter;

means for applying a pre-stored compensation factor to an offset adjustment calculation employing the second parameter to provide a compensated offset adjustment;

means for determining an adjusted gain based on a prestored gain factor and the second parameter; and

means for combining the compensated offset adjustment with the adjusted gain to provide offset and gain correction; and means for weighting the first parameter employing the offset and gain correction to provide a digitally compensated representation of the first parameter;

19. The system of claim 18, further comprising

means for scaling the digital representation of the first amplified analog signal to a first scale and for scaling the digital representation of the second analog signal to a second scale; and

means for converting at least one of the digital representation of the first amplified analog signal and the digital representation of the second analog signal to a scale that is compatible with at least one of the first and second scales.

20. The system of claim 18, the compensation system further comprising means for implementing the offset and gain correction as a digital fine offset and gain correction compensation on the first amplified analog signal.

21. A method for compensating for error in an analog amplifier, comprising:

determining a temperature compensation factor based on a digital representation of a temperature and a temperature compensation coefficient;

determining an offset adjustment for a digital representation of an analog amplifier signal based on a fine offset coefficient;

determining a temperature adjusted gain for the amplifier based on the digital representation of a temperature and a gain coefficient; and

determining an offset and gain correction based on the temperature compensation factor, the offset adjustment, and the temperature adjusted gain.

22. The method of claim 21, further comprising applying the offset and gain correction to the digital representation of the amplified signal to provide a digitally compensated representation of the analog amplified analog signal.

23. The method of claim 21, further comprising scaling the temperature compensation factor to match the scale of the offset adjustment.

24. The method of claim 21, further comprising combining the temperature compensation factor and the offset and adjusting the combined temperature compensation and offset adjustment having a scale and;

converting the temperature adjusted gain to a scale that matches the scale of the combined temperature compensation factor and the offset adjustment.

25. The method of claim 21, further comprising storing the temperature compensation factor in a first register, and storing the offset adjustment in a second register.

26. The method of claim 25, further comprising:

combining the offset adjustment with the temperature compensation factor to produce a temperature compensated offset adjustment; and storing the combined offset adjustment with the temperature compensation factor in a one of the first and second registers.

27. The method of claim 26, further comprising storing the temperature adjusted gain in a one of the first and second registers that does not contain the combined offset adjustment with the temperature compensation factor.